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CLAIMS

We claim:

- 3 1. A non-woven fiber assembly comprising one or more fibers wherein the fibers
4 contain:
5 an adhesive component;
6 an elastomeric component; and
7 a hydrophilic component.

- 1 2. The non-woven fiber assembly of claim 1, wherein the assembly is capable of
2 adhering to a dry substrate and is not capable of adhering to a wet substrate.

- 1 3. The non-woven fiber assembly of claim 1, wherein the assembly forms a
2 component of a medical dressing.

- 1 4. The non-woven fiber assembly of claim 1, wherein the adhesive component is
2 selected from the group consisting of homo- and co-polymers of acrylates,
3 silicones, polyvinylpyrrolidones and mixtures thereof.

- 1 5. The non-woven fiber assembly of claim 1, wherein the elastomeric component
2 is selected from the group consisting of polyurethanes, polyesters,
3 polyanhydrides, polyamides, polyimides and mixtures and co-polymers
4 thereof.

- 1 6. The non-woven fiber assembly of claim 1, wherein the hydrophilic component
2 is selected from the group consisting of linear poly(ethylenimine), grafted
3 cellulosics, poly(ethyleneoxide), poly vinylpyrrolidone, polypropylene-
4 oxides, polyurethanes, poly(hydroxyethylmethacrylate), and mixtures and
5 co-polymers thereof.

- 1 7. The non-woven fiber assembly of claim 1, wherein the composition of the one
2 or more fibers at a first surface of the assembly is different from the
3 composition of the one or more fibers at a second surface of the assembly.

1 8. The non-woven fiber assembly of claim 1, wherein the at least one fiber has a
2 diameter of between about 3 nanometers and about 3000 nanometers.

1 9. A method of making a non-woven fiber assembly, the method comprising the
2 steps of:
3 providing at least one fiber-forming material;
4 forming at least one fiber from said at least one fiber-forming material;
5 and wherein the at least one fiber forming material comprises an adhesive
6 component, an elastomeric component, and a hydrophilic component.

1 10. The method of making a non-woven fiber assembly according to claim 9,
2 wherein said one or more fiber-forming materials is provided in a solvent,
3 and wherein said solvent is selected from the group consisting of alcohols,
4 ethyl acetate, acetone, and tetrahydrofuran.

1 11. The method of making a non-woven fiber assembly according to claim 9,
2 wherein the relative amounts of said adhesive component, said
3 elastomeric component, and said hydrophilic component varies over time,
4 thereby producing a fiber assembly in which the composition of the one or
5 more fibers at a first surface of the dressing differs from the composition
6 of the one or more fibers at a second surface of the dressing.

1 12. A method of treating a patient comprising:
2
3 applying a non-woven fiber assembly to a predetermined area of the
4 patient, wherein the non-woven fiber assembly contains one or more
5 fibers comprising an adhesive component, an elastomeric component, and
6 a hydrophilic component.

1 13. An apparatus for forming at least one composite fiber, the fiber comprising a
2 hydrophilic component, an elastomeric component and an adhesive

3 component, wherein the apparatus comprises:

4 a plurality of reservoirs for containing more than one type of fiber-forming
5 material;

6 a plurality of valves, each independently in communication with a reservoir;
7 and

8 a fiber-forming device selected from the group consisting of a spinnerette, a
9 NGJ nozzle, and an electrospinning device, in communication with said valves.

1 14. The apparatus according to claim 13, additionally comprising a mixing
2 chamber in communication with said valves and said fiber-forming device.

1 15. The apparatus according to claim 13, wherein the fiber-forming device is an
2 electrospinning device, and additionally comprising a power source in
3 electrical communication with said electrospinning device.